AGICF
1-1
11-14-79

Field Investigation Report
Ace Galvanizing, Inc.
429 S. 96th
Seattle, Wash.

Date of Investigation: November 14, 1979

Investigating Personnel:
Judy Fey, EPA, Seattle, Wash.
Doug Smith, EPA, Seattle
John Conroy, DOE, Redmond, Wash.

Background:

Ace Galvanizing, located in the South Park industrial area of Seattle, began in the early sixties. The present owner, David Breiwick, took over operation of the plant in 1972. He stated that he had been in the industry since 1963, and also owns two other plants, one in the north end of Seattle, and one in Portland.

Site Investigation:

The plant, about 5 acres in size, is composed of a large industrial looking building where the galvanizing process is carried out and two storage sheds, one large and one small. A plating company called Anchor Post occupies the back half of the large shed. See attached sketch. The process building appeared run down and the rear yard was littered with various metal pieces, empty barrels and rubbish.

We met Mr. Breiwick in his office for an hour before we toured the plant. He reported that no process wastes go off the plant, that the plant is a closed system. Rinse waters are recycled, preflux and flux are recycled, acid and caustic baths are replenished after evaporation. He stated that all the old drains and effluent out-puts have been plugged. He went on to explain that there is some problem with the first rains of the wet season because the run-off contains about 10 to 20 parts per million of zinc. After the first 30 minutes the amount of zinc drops to 1 ppm. The run-off goes into a storm drain and ditch that leads to the Duwamish River about 1/2 mile east of the plant. He said that the run-off had been monitored at a manhole in front of the plant on S. 96th for about 3 years. The sample collections and lab analyses had been done by DOE and a private chemist named Bill Bayley. Metro sewers are being installed about 4 blocks east of the plant on S. 96th, and Breiwick said that the plant would probably be hooked up to the sewers shortly. He reported that they occasionally have a solid waste consisting of a sludge

containing metals and oil and pigment residues. About every 2 to 3 years, the caustic tank is drained and the sludge is dug out and put in 55 gallon drums. The average volume us two drums per cleaning. The drums are moved to the dumpster just outside the plant and hauled away by Seattle Disposal. Breiwick didn't know where Seattle Disposal takes the wastes, now, but he believed they had been taken to an Indian Reservation in the past. He stated that no cyanides are used now and hadn't been used for the past 7 to 8 years.

Breiwick described the raw materials as being zinc ammonium chloride stored in cardboard barrels, barium chloride stored in sacks and drums, HCl stored in drums, hydrogen peroxide and several other chemicals used to neutralize and purify the preflux, muriatic acid brought in by Widing Transport and delivered directly to the dipping tank on an as need basis, sulfuric acid stored in a 10,000 gallon tank located on the outside of the west side of the process building.

Mr. Breiwick referred to two people who were doing chemical analyses and consulting for the company. Bill Bayley (206-762-3520), a private Seattle chemist has been working with Breiwick for about two years. He also has been involved with planning an effluent collection system at the Portland plant which will remove zinc sufficiently to allow discharge to the sewer. The other person is Tom Cook (308-635-3634), a teacher at Nebraska State University, specializing in chemistry associated with the galvanizing industry. He has been working with Breiwick on a preflux recycling process.

When questioned about past disposal practices, Breiwick had little knowledge and said there were no records available. He did know that cyanide waste waters had been dumped on the plant grounds. He agreed to check it out with a past manager.

After the interview, we toured the facility with Les Ruggles, the plant foreman. The production manager, Doug Mack, was out of town. The plant is situated on an incline sloping from west to east. The area within approximately a 2 to 3 block radius is completely industrialized, and a large construction project is underway directly east of the plant. We toured the process building while Les explained the galvanizing procedure. Parts are cleaned (pickled) in a caustic tank, rinsed in water, cleaned further in sulfuric acid, rinsed again in water, dipped in a preflux of ammonium chloride, then dipped in the molten zinc, and cooled in a water quench. Some parts that require more gentle cleaning are dipped in muriatic acid (HCl) instead of the sulfuric acid. We then went to the large shed which houses a zinc recyclor and barrels of dust and caustic. The recyclor separates zinc from the ash that is used as flux on top of the molten zinc. The reclaimed zinc is put in the molten zinc tank and the dust is sold to various companies. The smaller shed houses the other raw materials and acetylene tanks. The

chemicals are stored in a random fashion and in close proximity to each other. There is an abandoned diesel storage tank located above ground at the southeast end of the large shed and a gas pump at the northwest end of the small shed. The tank contains regular gasoline and there is an unleaded nozzle on the pump.

The entire plant is fenced and gated. The rubbish dumpster is located on the east side of the driveway about 50 feet south of the main plant outside the fenced area. Vegetation was sparse around the plant, and what was present appeared to be dying.

Two additional dipping tanks were observed outside the south end of the west wall of the process building. One appeared to have dirty water in it and the other had an oily looking liquid in it. No samples were taken. Ruggles stated that the oil was used in a cyanide process that they didn't use very often. He thought they had used it within the past year. There were metal pieces and empty drums and miscellaneous litter stacked around the tanks. They appeared to be seldomly used.

Conclusion:

Ace Galvanizing doesn't seem to be generating any hazardous wastes. The disposal practices for other wastes appears to be controlled. The zinc laden runoff is being monitored by the Wash. DOE. A baghouse is being installed over the molten zinc tank to collect fumes. There seems to be a discrepancy between what we were told by Breiwick and Ruggles over the use of cyanide. There may be potential danger because of storage practices of raw materials in the small shed.